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ABSTRACT

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The Effects of a Playgroup Experience on Mother-Child and Father-Child Interaction

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Running Head: Effects of Playgroup Experience

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Abstract

The purpose of this study was to compare the mother-child and father-child interaction of toddlers who were completely home reared with the interactions of toddlers who were participants in a daily three hour playgroup. For the comparisons, both mother-child and father-child interactions were videotaped in a semi-structured laboratory setting. The first observation was made immediately before the beginning of the playgroup experience, with subsequent observations being made after half of the toddlers had been in a playgroup three and six months. While there were no differences in the playgroup and homecare toddlers before the playgroup experience, significant differences were found after the playgroup experience. The playgroup toddlers became proportionally more active in their social interactions. They also became more responsive to the interaction initiations of their parents. Significant differences were also found in parental behavior as a function of the playgroup experience. The parents of the playgroup children became significantly less controlling. In addition to playgroup/homecare differences, significant differences were also found in mother-child and father-child interaction independent of the playgroup experience.

The Effects of a Playgroup Experience on Mother-Child and Father-Child Interaction

Increasing numbers of families, for a variety of reasons including economic necessity and a belief in the value of a peer experience, are placing their young children in care outside of the home for at least part of the day (Fein & Clarke-Stewart, 1973). These placements have been a matter of concern for developmental psychologists as well as for parents. There have been fears that the relationship between mother and child might be adversely affected by a group care experience. Bowlby (1973) and Ainsworth (1973), for example, have suggested on theoretical grounds that the repeated separations associated with group care might be especially detrimental to infant attachment in the first two years.

In light of these fears and warnings, several researchers have compared the attachment of home care and group care infants. Children in low income (Caldwell, Wright, Honig, & Tannebaum, 1970; Ramey & Mills, 1976) and middle-income (Blehar, 1974; Ragozin, Note 1) families have been studied. Children who spend half-days away from their mothers have been observed as have children who spend more time away from mother (Riccuiti, Note 2; Riccuiti, 1974). Mother-child attachments have been assessed in the Ainsworth strange situation (Blehar; Moskowitz & Schwartz, Note 3), more naturalistic laboratory settings (Caldwell et al.; Ramey & Mills, 1976), and in the home (Brookhart & Hock, 1976).

The bulk of these studies (Riccuiti, Note 1; Schwartz, Note 4) have been in agreement on the issue of the effects of group care on the quality of infant attachment. They have concluded that there is little difference in the quality of attachment in the two groups. Blehar's findings of impaired relationships which were made on somewhat older children have been the exception.

While the previous paragraph might be seen as suggesting that little remains to be done in the investigation of the effect of a group care experience on parent-child relationships, this conclusion is not warranted. A review of the existing research indicates several important issues that have not been explored.

First, the existing research has not included analyses of the social interactions of homecare and groupcare toddlers with their mothers. Most of the studies have emphasized a list of attachment behaviors or ratings of the quality of the mother-child relationship. We know little about the characteristics of the actual social interactions engaged in by the two groups. Are the parental interactions of toddlers who are in playgroups or daycare different from those of their home reared agemates? Implicit in this question is the need to look at both the mother's and the toddler's behavior during social interaction, not just for attachment indices in the toddler's behavior.

A second weakness in many of the existing studies is the assumption that a group experience is at best not harmful and at worst deleterious to the mother-child relationship. While this assumption may be warranted for full-day care, it may be less justified for group care over briefer periods of the day. Mueller and Brenner (1977) have shown that the social skill of toddlers with their peers was facilitated by a playgroup experience. Is it possible that a playgroup experience may also have a facilitative effect on toddlers' social skills with their parents?

A third characteristic of the existing research makes this a difficult question to pursue. Existing studies have been primarily post hoc affairs. Group care and home care children have been paired during or after the group

experience. No attempt has been made to determine if the groups were equal before the group experience. Schwartz (Note 3) and Ricuitti (Note 2) have suggested that some differences may exist before group care. Of course, any conclusions that differences are caused by a group experience must take these prior differences into account.

Finally, previous research on the effects of group care on family relationships has emphasized the effects on the attachment relationship with the mother. Recent social development research, however, has indicated that father-child relationships are also important (Lamb, 1976). In light of this importance, one may want to examine the effects of a group experience on father-child interaction as well as on mother-child interaction. Also, as part of a general effort to better understand the role of mother-child and father-child interaction, one may want to ask whether there are differences in mothers' and fathers' interactions with their toddlers which over-ride any playgroup/homecare differences.

The current study was designed to address each of these issues. Both mother-child and father-child interactions were analyzed in detail. The observations were made over a six month period, with the first observation being made before the groupcare children began their group experience.

Method

Subjects

Twelve families participated in the study. Six of the families had toddler sons who were members of a daily playgroup. The other six families had toddler sons who were completely home-reared.

The following restrictions were placed on the participants: (1) all families were intact, (2) all toddlers were 16 months old (+ 2 weeks) at the beginning of the study and 22 months old (+ 2 weeks) at the study's completion, (3) both parents had to be willing to participate in the observations. (All families contacted agreed to the third condition.)

The playgroup (PG) and homecare (HC) children and their families were also matched for (1) birth order of the child, (2) sex of the child, (3) social class of the family, and (4) child's race. Half of the children were first borns; and half were latter borns. All were males. The families ranged from skilled laborer to professional. One family in each group was black.

The PG children were solicited through advertisements in local newspapers and radio stations. The families were promised quality half-day care at no cost in exchange for the family's participation in the research effort. The names of the HC children who met the criteria were obtained from a local physician. All the homecare families who qualified and who were contacted agreed to participate.

Playgroup Environment

The six playgroup children were brought daily to a university playgroup where they were left by their parents (usually their mothers). The playgroup then lasted three hours each morning. During that time, the toddlers were cared for by two teachers, one male and one female. Both had extensive child care experience.

The teachers were instructed to create an interesting and safe environment for children. At the same time, the teachers were asked not to try

and teach pre-academic skills or social games. The focus of the program was on allowing the toddlers an opportunity to interact with each other in an interesting place.

Procedure

Observations of mother-child and father-child interaction were made at three evenly spaced intervals over a six month period. The first observation was made immediately prior to the opening of the playgroup. The second two observations followed three and six months later.

The observations were conducted in a comfortable room at the university where the toddlers attended the playgroup. The room, not the one where the playgroup met, was carpeted with posters on the wall, comfortable chairs, coffee table, magazines, plants, etc. A camera was positioned behind a partition in one corner of the room. The same cameraperson collected all the videotapes; and she had extensive contact with all the PG and HC families as part of their participation in the larger project.

Mother-child and father-child sessions were conducted on separate days in a counter-balanced order. Each session lasted thirty minutes. The first 10 minutes consisted of a Goldberg and Lewis (1972) "free play" situation. This portion of the session was not analyzed in the current study and is not discussed further. The last 20 minutes made up the current procedure. During that time, parents were instructed that we wanted their sons to play with four toys: crayons and paper, picture book, cash register with pennies, and "surprise box" (a commercial toy with a series of jack-in-the-boxes opened in various ways). Beyond the instructions that the session would last 20 minutes and some time should be spent with each toy, parents were told they

could do anything they wanted. This procedure among others had been pilot tested on another group of mothers and fathers and the above procedure was selected because it was free enough to allow substantial differences between people to emerge and yet structured enough that parents did not appear ill at east with it.

Coding Procedure

After the videotapes were collected, they were coded using a written record that preserved [redacted]tor changes during the interaction sequences and the content of social acts used by the parents and children in the sequences. Definitions used in translating the videotapes into the longhand record are provided in the Appendix. Table 1 lists the parent and child measures that were then extracted from the longhand record.

Insert Table 1 about here

As indicated in Table 1, a bi-level analysis of the longhand record was undertaken for both parents and toddlers. As may be apparent, the two levels were seen as building blocks with specific content acts then forming more general individual measures.

At the most concrete level, the particular content of the toddlers' and parents' social acts was ascertained. An act was defined as social if it was accompanied by, immediately preceded by, or immediately followed by looking at the other person. Several researchers (Becker, 1977; Bronson, 1975; Mueller & Brenner, 1977) have used a similar definition to establish whether or not an act is social.

Two broad categories of social acts were examined: SPECIFIC MOTOR ACTS and SPECIFIC VOCAL ACTS. For the parents, both SPECIFIC VOCAL ACTS and SPECIFIC MOTOR ACTS were broken into seven categories. For the largely pre-verbal toddlers, the detailed vocal categories were not possible, but their motor acts were divided into eight categories.

At the second level of analysis, more abstract measures of individual performance were examined. These measures were all grouped under the heading of GENERAL INDIVIDUAL MEASURES for both parents and toddlers. Included at this level of analysis was the determination of who successfully and unsuccessfully initiated interactions (irrespective of content) as was the determination of who terminated the interactions. The complexity of the participants' socially directed behaviors (irrespective of content) was also analyzed. A simple behavior was defined as a single social acts (e.g., smile with the look assumed), while a coordinated behavior consisted of at least two social acts done concurrently or sequentially (e.g., smile and vocal).

To determine whether an individual's two acts were contiguous and thus indicative of a coordinated behavior or whether they were two separate entities, two simple behaviors, a "three second rule" was adopted. Thus, if a child vocalized and then waved within three seconds, a single coordinated behavior was coded. If more than three seconds elapsed between the vocal and wave, two simple behaviors were coded. This distinction between a simple and coordinated behavior was supported empirically. An average of 13.7 seconds separated simple behaviors. Acts within a coordinated behavior were separated by less than a second.

Inter-observer reliabilities were computed for each of the measures listed in Table 1 using ten videotapes which were randomly selected from the larger corpus of videotapes. These videotapes were then independently coded by each of the four coders. Reliability for the GENERAL INDIVIDUAL MEASURES was computed using the analysis of variance technique outlined by Winer (1971, p. 283-296). For each of these measures, agreement was greater than .90. Inter-observer reliability for the SPECIFIC VOCAL AND MOTOR ACTS was computed using the formula agreement/agreement + disagreement for the specific behaviors listed in the ten longhand records. Using this formula, reliability exceeded .75 in each longhand record, with mean agreement equalling .81.

Data Analysis

While all observations lasted approximately 20 minutes, there was some variability in durations. To adjust for these differences, all raw frequency scores were divided by their particular observation duration and then multiplied by 1000. This procedure yielded frequencies as rates per 1000 seconds, a more manageable number than rates per second.

The adjusted scores for each of the measures were then analyzed in several ways. The first set of analyses compared the parent-child interactions of the PG and HC samples before the playgroup began. The question asked was whether there were differences in the two groups prior to the group experience. Because of the number of measures that were being considered, multifactor multivariate analyses of variance were used for the parental measures and the toddler measures. (See Table 1 for the particular measures included in each MANOVA.) For each of these MANOVAs, rearing condition (HC vs PG) was treated as a between factor. Parent (Mother vs. Father for

the parental analysis or Toddler to Mother vs. Toddler to Father for the child analyses) was treated as a within factor.[1] The test of significance used was the Wilk's lambda criterion. The approximate F was derived using Rao's approximation. Only when a significant approximate F was found in the multivariate analysis were univariate ANOVAs conducted on the particular measures that were included in the cluster.

After the pre-playgroup analyses were conducted, the effects of the playgroup experience were then examined over time. Once again, MANOVAs were conducted for the three clusters of parental measures and the two clusters of toddler measures. Within these MANOVAs, parent and time (Periods 1, 2, and 3) were treated as within factors. Rearing condition was once again treated as a between factor. In those cases where pre-groupcare differences had been found, multivariate analyses of covariance were conducted instead of multifactor ANOVAs . The covariance analysis allowed for the control of the pre-group differences. As was the case in the Period 1 analyses, univariate ANOVAs were conducted only when the overall MANOVA or covariance analysis was significant. Because the MANOVAs were multifactorial, comparisons of mother-child and father-child interaction were also possible in the analyses as well as the examination of possible statistical interactions between group care and parent factors.

Results

Three questions were explored in the data analysis. First, were there differences in the social interactions of the PG and HC families even before the group experience? This question included the necessity of looking at both the parents' and the toddlers' behavior during interaction. Second, did

differences emerge between the HC and PG groups after half of the children had been in the playgroup? Third, were there differences in the effects of the playgroup on mother-child and father-child interaction? Results pertaining to each of these questions are presented in turn.

Pre-playgroup comparisons

The multifactor (rearing condition and parent) MANOVAs at Period 1 showed no significant differences in the HC and PG parents for general individual measures, $F(6,5) = 4.57$, N.S., or for specific motor measures, $F(7,4) = 3.46$, N.S. A significant difference was found in the MANOVA for specific vocal measures however, $F(7,4) = 11.21$, $p < .05$. Univariate ANOVAs revealed that the HC parents were significantly more likely to use comments, $F(1,10) = 11.28$, $p < .01$, questions, $F(1,10) = 17.72$, $p < .01$, and social routines, $F(1,10) = 8.94$, $p < .01$. It appeared that the PG parents simply talked less to their sons even before the playgroup experience.

At the same time, the MANOVA s for general individual measures and specific motor measures revealed no significant differences in the HC and PG toddlers prior to the playgroup experience. Thus, any subsequent differences in the PG and HC toddlers may not be attributed to any initial differences in the two groups.

Effects of Playgroup Experience on Parental Behavior

The multifactor MANOVAs across the three time periods (before the playgroup, three, and six months later) revealed a significant playgroup effect on the parents' behavior to their sons. While there were no significant differences in the cluster of general individual measures or in the cluster of specific motor measures before the playgroup began, significant playgroup

differences clearly emerged over the three periods, $F(6,15) = 21.20$, $p < .01$ for general individual measures and $F(7,14) = 5.57$, $p < .01$ for specific motor measures. In the area of general individual measures, the HC parents engaged in significantly more component acts and in significantly more isolated behaviors with their toddler sons (see Table 2). It was only in the percentage of simple behaviors that PG parents showed significantly greater proportions than the HC parents.

Insert Table 2 about here

The effects of the playgroup experience on the specific vocal measures used by the HC and PG parents was also examined. Because of the initial differences in vocalizations pre-playgroup, a multifactor multivariate analysis of covariance was conducted instead of a MANOVA. In this covariance analysis, a significant difference was found in the two groups of parents even after initial differences were controlled, $F(7,17) = 3.19$, $p < .05$. Specifically, HC parents came to engage in significantly more imperative-onewords, negatives, questions, and social routines with their sons, even controlling for initial differences (see Table 2).

Effects of Playgroup upon Toddler Behavior

The toddlers were also affected by the playgroup experience. Although the HC and PG toddlers were initially similar, significant group care differences were found for both clusters of toddler measures in the three way MANOVA (rearing condition X parent X time). The HC and PG toddlers came to differ in both specific motor measures and general individual measures (see Table 3).

Insert Table 3 about here

The univariate ANOVAs revealed a similar pattern across measures in both clusters. The PG toddlers became significantly more active in their parental interactions than were the HC toddlers. Specifically, within specific motor behaviors, the PG toddlers engaged in more proximity seeking and more object related social behaviors. Within general individual measures, the PG toddlers were proportionally more active in their interactions than were the HC toddlers. The percentage of component acts that were the toddlers was significantly larger in the PG boys as was the percent of actor changes that were the toddlers'. If an interaction ideal is a 50/50 exchange with each partner contributing equally, then the PG toddlers were more clearly approximating the ideal. The PG toddlers also terminated a significantly smaller proportion of interactions which also came closer to the 50% level one might expect from equal social partners.

Mother-Child versus Father-Child Interaction

In addition to the comparisons of PG and HC interactions, the multifactor MANOVAs also permitted comparisons of maternal and paternal behavior (for the three clusters of parent measures) as well as toddler to mother versus father (for the two clusters of toddler measures). In these MANOVAs, no significant statistical interactions were found between playgroup experience and parent factors. The playgroup differences reported in the previous section were found for both mothers and fathers and for the toddlers' behavior to both parents. At the same time, however, a main effect

for the parent (mother vs. father) factor was found independent of the playgroup experience. Significant differences were found in the mothers' and fathers' behavior as well as in the toddlers' behavior to each parent.

Mothers versus fathers. A significant parental main effect was found in the multifactor MANOVA for the parents' general individual measures, $F(6,15) = 3.91$, $p < .05$; specific vocal measures, $F(7,14) = 11.20$, $p < .01$; and specific motor measures, $F(7,14) = 5.78$, $p < .01$. Univariate ANOVAs indicated that the mothers were significantly more active in their social interactions with their toddler sons than the fathers were (see Table 4).

Insert Table 4 about here

The mothers used significantly greater frequencies of affirmative-praise, didactic-label, and social routine. The mothers were also characterized by significantly more positive affect than were the fathers. In addition, the relative proportions of vocalizations versus motor acts varied. The mothers were proportionally more vocal, while the fathers used a significantly higher proportion of motor behaviors with their sons.

Toddlers' behavior to mother versus to father. In addition to mother/father differences the toddlers' behavior to mother and father varied significantly (see Table 4). The toddlers had a significantly higher proportion of total component behaviors with their fathers than they had with their mothers. Thus, the toddlers more closely approximated the 50/50 balance one might expect of equal interaction partners with their fathers. The quality of the toddlers' behavior also carried across social partner. The toddlers were proportionally more vocal with their fathers and

proportionally more motoric with their mothers. Finally, the toddlers were more likely to direct isolated social behaviors to their fathers. Or, in another way of describing isolated behaviors, the toddlers were less likely to elicit a social response from their fathers than they were from their mothers.

Discussion

In the present study, the playgroup experience was found to have a significant effect on the toddlers observed. Before the playgroup, no significant difference was found in the homecare and playgroup toddlers, but over time significant differences emerged in the content of specific motor acts and in the more general individual measures of social behavior. The playgroup toddlers came to direct significantly more proximity seeking and object related social behaviors to their parents than did the homecare toddlers. At the same time, the PG toddlers came to terminate significantly fewer of their parent-child interactions over time. They also came to contribute significantly greater proportions of the total component social acts and total actor changes with their parents.

Several interpretations of these differences are possible. On the one hand, one might argue that the playgroup toddlers were less "secure" in their attachment, hence their greater proximity seeking. A second interpretation of these differences can be made, however. The playgroup can be seen as increasing the level of social skills seen in the playgroup toddlers; and the increased proximity seeking can be seen as part of this overall skill.

Other evidence supports this second interpretation. For example, the decreased proportion of terminations and increased proportion of actor

changes and component behaviors can be seen as a closer approximation of a 50/50 relationship. If a goal of social interaction is a more equal representation in the interaction, then the playgroup may be seen as having a beneficial effect.

The results concerning the parents' behavior also support the argument that the playgroup facilitates the development of greater social skill in the toddlers. Once again, there were no differences in the two groups of parents in terms of specific motor behaviors or in terms of their general individual behaviors before the playgroup, but differences did emerge over time. The homecare parents came to direct significantly more isolated social behaviors to their toddler sons. Since these isolated behaviors may also be seen as a failure to elicit a response from the intended social partner, it can be argued that the PG toddlers became significantly more socially responsive over time.

In addition to the difference in frequency of isolated behaviors, the parents of the PG toddlers came to direct proportionally more simple behaviors to their sons over time. This pattern of simple behaviors was an especially interesting one. Inspection of the data showed that both parents and toddlers tended to use simple behaviors during successful interaction sequences (i.e., interaction sequences of at least two exchanges), while they used coordinated behaviors in their isolated social behaviors. In fact, only forty percent of the isolated behaviors were simple behaviors, while over 54 percent of the behaviors during interaction were simple. It looks like when an interaction was working only short simple behaviors were necessary, but when no response was forthcoming, an escalation in the form of piling on of behaviors (perhaps in the hope that one might work) appeared.

Not all differences in parental behavior can be attributed to changes in the toddlers' behavior in the playgroup, however. While differences in motor and general individual measures did not emerge until after the playgroup experience, it is important to note that at least in one area there were differences in the two groups of parents before the playgroup experience. The parents of the home care toddlers were significantly more likely to use vocalizations like comments, questions, and social routines even before the playgroup began. The playgroup parents simply talked less even before the differential experience.

This difference suggests that parents who choose to place their toddlers in a playgroup may differ in some ways from parents who do not choose such an experience. The meaning of these differences is somewhat open to interpretation. One might argue that the HC parents were more "invested" and "interested" in their sons; or, one might contend instead, that the HC parents were more "dominant" and "controlling." The data from across the three periods better support the latter hypothesis. In the covariance analysis across time, the home care parents came to use significantly more imperatives, negatives, questions, and routines. The greater frequency of imperatives and negatives may certainly be seen as directed at controlling the child. Regardless of the interpretation of these vocalization differences, however, at the very least, future studies must consider the possibility of initial differences in the home care and group care families who are studied.

In addition to the examination of the effects of a playgroup experience on parent-child interaction in general, a second focus of the current study was to compare possible differences in the playgroup effect on mother-child

and father-child interaction. In this regard, no differential playgroup effect was found for one parent and not the other or in the behavior of the toddler to one parent and not the other; i.e., there were no statistical interactions between parent and rearing condition. Instead, mother/father main effects were found for both parent and toddler measures.

First of all, significant differences were found in maternal and paternal behavior. For example, mothers as a group directed significantly more vocalizations such as affirmative-praise and didactic-label to their sons than did the fathers. They also used significantly more positive affect with their sons than did the fathers. In terms of more general individual measures, the mothers were proportionally more vocal, while the fathers were proportionally more motoric.

Significant differences were also found in the measures of the toddlers' behavior to mother and fathers. The proportion of the toddlers' participation was significantly smaller in the mother-child interaction situation, with father-child interaction being a much more even proposition. At the same time, however, the toddlers had significantly more isolated social behaviors with their fathers. Since these isolated behaviors were social behaviors which did not elicit a response, the fathers (both playgroup and home care) may be seen as less responsive to their toddlers than their wives were.

These differences in parent and toddler measures are congruent with as well as divergent from the findings of Lamb (1977), Clarke-Stewart (Note 5) and Yogman (Note 7). The differences in caretaking behavior reported by Lamb and Clarke-Stewart were not found (and one would not expect to find

them in this semi-structured play situation). At the same time, the more even exchanges between father and child suggested by Clarke-Stewart and Lamb were found as was the predominance of vocalizations in mother-child interaction (Yogman). Of most relevance to the current study, however, was that these differences in the mother-child and father-child interaction crossed playgroup/home care differences. If one argues that mother and father fulfill different functions in social development, then it may be important that the playgroup does not affect these different functions.

Footnote

1. Mother and father were treated as a within factor for both toddler and parent measures. For toddlers, the rationale behind the within treatement is obvious. The same child, the son, is interacting with two different partners (mother and father). For the parent measures, the rationale behind the repeated measures treatment may be less apparent, but still justified. The repeated measures approach recognizes the family as the unit of analysis; and previous work supports such a unit. For example, Clarke-Stewart (Note 5) and Vandell (Note 6) have shown that the parents' behavior of a particular family are correlated. The repeated measures also take advantage of the fact that the mother and father of a particular family are interacting with the same child and [illegible] just any child.

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Appendix

Definitions Used in Longhand Record

Social Interaction	A series of at least two contingencies in which the social behavior of one person is responded to by a second person's social behavior within 3-4 seconds.
Social Act	Any behavior accompanied by or immediately preceded by or followed by looking at another person subject to two constraints: (1) it is perceivable and (2) it is discrete rather than continuous. In instances where a behavior is clearly directed to another person in the absence of looking, a social behavior is still coded.
Interaction initiator	The person with the first social behavior during an interaction sequence.
Interaction terminator	The person who would be expected to act next in an interaction sequence but does not.
Isolated social behavior	Coded whenever a person directs a social behavior to the other person and receives no contingent response within 3 seconds.
Simple social behavior	Social behaviors of the form "look plus only one other specific content act."
Coordinated social behaviors	Social behaviors of the form "look plus at least two other specific content acts." These acts must not be separated by more than 3 seconds.
Component Acts	Total of all vocalizations and motor acts.

Table 1

List of Parent and Toddler Measures Taken from the Longhand Record

Parent Measures:

General Individual Measures:

component acts: sum of parent's vocalizations and motor acts

isolated behaviors: number of times parent directs a behavior to child and does not get a response within 3 seconds

% simple behaviors: proportion of total social behaviors (simple and coordinated) that are simple

vocalizations: total of all parent's specific vocal acts listed below

motor acts: total of all parents' specific motor acts listed below

% vocal: proportion of total social acts (vocal and motor) that are vocal

Specific Vocal Measures:

Affirmative-praise: use of "yes," "yeah," "good," etc.

Comment: a description of a person's state, a task, etc. eg. "I'm going to color." "I don't see any."

Didactic-label: main function is to teach, maybe a verbal label, an elaboration of a label, or instructions on how to do something

Imperative-oneword: a directive, it may be a oneword imperative such as "Push" or it may be a longer utterance such as "Push the button!"

Negative: "NO"

Question: any question, including utterances with question intonation or tag questions

Social routine: ritualized speech, eg. "Whoops," "Bye-Bye," "Uh-Oh"

Specific Motor Measures:

Body Contact: eg. touch, pat, pick up, lead by hand

Exchange: eg. offer, receive, give

Head Gesture: shake or nod head

Hand Gesture: eg. point, wave, reach for

Object related social behavior: manipulate an object, show, demonstrate with an object

Positive Affect: smile or laugh

Object Seizure: take or attempt to take an object

Child Measures:

General Individual Measures:

% component acts: proportion of total component acts (parent and child) that is the child's

% initiate: proportion of total initiations (Parent and child) that is the child's

% terminate: proportion of total terminations (parent and child) that is the child's

% simple: proportion of child's total behaviors (simple and coordinated) that are simple

% vocal: proportion of child's total social acts (vocal and motor) that are vocal

isolate: number of times child directs a behavior to parent and does not elicit a response

motor: total of all child's motor acts listed below

% actor changes: proportion of total actor changes in interaction sequences that are the child's

Specific Motor Measures:

Body Contact: same as above

Exchange: same as above

Hand Gesture: same as above

Large Body: eg. Run, jump, clap, roll over, etc.

Object Related: same as above

Proximity Seeking: approach to within 3 feet

Positive Affect: same as above

Object Seizure: same as above

Table 2

The Effects of Playgroup on

Parental Behavior[1]

Parental Behavior	Playgroup $\bar{X}$	Homecare $\bar{X}$	Significance MANOVA	Significance ANOVA[2]
General Individual Measures			***	
# component	226.6	356.0		**
# isolated	13.5	23.0		***
% simple	44.5	34.1		*
# vocalizations	162.8	275.8		**
# motor	60.6	83.4		**
Specific Motor Behavior			**	
# object related	13.2	21.7		*
Specific Vocal Behavior			*[3]	
# imperative oneword	35.8	44.8		*
# negative	3.6	4.3		*
# question	34.9	67.0		*
# routine	13.5	27.1		*

[1]This table summarizes the significant results concerning the rearing condition (playgroup vs. homecare) factor in the 3-way MANOVAs (Rearing Condition X Sex of Parent X Time) and 3-way ANOVAs. Only effects on the measures of parent behavior are outlined here in Table 2.

[2]ANOVAs were conducted for the specific measures only if a significant MANOVA was found for the overall cluster of measures.

[3]Significance after covariance analysis.

* $p < .05$
** $p < .01$
*** $p < .001$

Table 3

The Effects of Playgroup on Toddler Social Behavior[1]

Child Behavior	Playgroup X	Homecare X	MANOVA	ANOVA[2]
General Individual General			**	
% component	29.5	18.9		**
% terminate	69.0	83.3		**
% actor changes	41.7	35.6		***
Specific Motor Behavior			***	
# object related	15.4	5.8		*
# orienting	2.2	.5		**

[1]This table summarizes the significant results concerning the rearing condition (playgroup vs. homecare) factor in the 3-way MANOVAs and 3-way ANOVAs. Only effects on toddler behavior are outlined in Table 3.

[2]ANOVAs were conducted for the specific measures only if a significant MANOVA was found for the overall cluster of measures.

* $p < .05$
** $p < .01$
*** $p < .001$

Table 4

Comparisons of Mother-Child and Father-Child Interaction Across Rearing Condition[1]

	Mother	Father	Significance of	
Parent Behavior:	X	X	MANOVA	ANOVA
General Individual Measures			*	
% vocal	75.8	70.5		+
Specific Vocal Measures			**	
comment	34.6	23.3		*
didactic-label	36.4	25.1		*
routine	23.8	16.8		+
Specific Motor Measures			**	
Positive Affect	7.5	4.2		+
Child Behavior:				
General Individual Measures			*	
% component	21.9	26.6		+
% vocal	43.7	48.2		+
# isolate	.4	1.2		+

[1]This table summarizes the significant results concerning the parent factor (mother vs. father or child to mother vs. child to father) in the 3-way ANOVAs and 3-way MANOVAs.

\+ $p < .10$
* $p < .05$
** $p < .01$